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REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

The Examiner has objected to claims 1-7 and 10-13 under 35 USC 103(a) as being unpatentable over Chance in view of Levitt. Essentially, the Examiner alleges that Chance discloses the method of the present invention, except for the simultaneous detection at multiple wavelengths, and that Levitt discloses such simultaneous detection of multiple wavelengths. This objection is respectfully traversed for the reasons set forth below.

The invention described in the present application provides for a method of temporal point spread function (TPSF) based optical imaging in which light diffusing in an object is simultaneously detected at a plurality of wavelengths to obtain separate TPSF-based data for each of the wavelengths. Reconstruction of an image based on TPSF data is of course dependent on the temporal resolution of the signal. There is no teaching in Levitt of simultaneously detecting a temporal signal at multiple wavelengths. In fact, if the teaching of Levitt were to be applied to the present invention or the teaching of Chance, this would result in a loss of temporal information. This can be understood by considering, for example, Figure 1 of Levitt, wherein the system of Levitt is described. Specifically, the RF-input signal (which may be an optical signal) is first split into two beams, and these two beams are then directed to a channelized optical phase measurement (COPM) unit, in which the input signal is used to modulate a carrier signal with respect to frequency, phase and optionally amplitude information (see column 4, lines 22-26 of Levitt). Thus, it is easy to understand that any time information contained in the TPSF input signal would be lost in the COPM module. Furthermore, the delay line between the power splitter and the COPM of Levitt would introduce a time discrepancy between the split signals, which would make it very difficult to recover accurate time information for the resolved frequency.

The Examiner has further rejected claims 1-16 under 35 USC 103(a) as being unpatentable over Feng et al. in view of Levitt. Again, the Examiner alleges that Feng et al. essentially teach the method of the present invention, except for the simultaneous detection at multiple wavelengths, but that Levitt discloses simultaneous detection. The Examiner is

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referred to our argument above, in which it is clearly established that no teaching can be found in Levitt of the simultaneous detection at a plurality of wavelengths to obtain TPSF-based data for each of the wavelengths. Furthermore, Feng et al. teaches a frequency domain method (wheretin if time domain data are acquired, they can be converted to frequency domain via Fourier transform). The combination of Feng et al. and Levitt clearly does not teach or suggest the present invention as claimed since if one were to follow their teaching, the frequency domain data obtained by the method of Feng et al. would be processed using the frequency modulation method of Levitt. Applying frequency modulation to a signal that is already frequency modulated would clearly not result in simultaneous measurements of time domain signals. Accordingly, the Examiner's objection in that regard is also respectfully traversed.

Finally, claims 8-9 and 14-16 are rejected under 35 USC 103(a) as being unpatentable over Chance in view of Levitt and Feng et al. With regard to claims 8-9 the objection is respectfully traversed for the reasons provided above. With regard to claim 14-16, as argued in our response to the previous office action, the apparatus provides for the simultaneous detection of TPSFs at a plurality of wavelengths. Again neither Levitt nor Feng et al. teach simultaneous detection of multiwavelengths. In fact the illumination/detection arrangements of Levitt provides frequency discrimination by measurement of relative phase difference between the original (RF0) and the delayed version (RF1) of the incident RF signal (col 2 lines 28-30) which of course preclude accurate time (TPSF) measurements at multiple wavelength. Furthermore it is stated at col.2 lines 59-61 that

"...the present invention permits frequency measurement of multiple, time-coincident, and continuous wave signals..." (underline added).

Clearly Levitt teaches away from TPSF measurement since the measurement is made on continuous wave signals. Thus the claims are clearly patentable over Chance taken together with Levitt and Feng et al.

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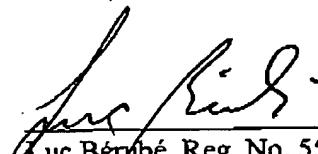
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In view of the foregoing comments, favourable reconsideration of this application is respectfully requested.

Respectfully submitted,
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By:


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